television channels on cable 57% of the time.[25] Since these channels are almost never scrambled, these subscribers do not need a descrambler for either their viewing or taping. It is further claimed by the EIA that 75% of the use of a VCR is for play back of prerecorded tapes rather than time shifting.[26] Of the time shifting that does take place, most of it is of broadcast channels, which are not scrambled. Accordingly, compatibility problems associated with scrambling never arise for the bulk of normal cable viewing or VCR use.

Similarly, the consumer who takes only a basic service tier subscription has no scrambled channels in essentially all cases. All the over-the-air channels are provided (assuming retransmission consent is not denied) along with public, educational, and governmental channels. There is no need for a descrambler at all and no interference with any functions of TVs and VCRs occurs as a result of any scrambling employed on the cable system.

The basic service tier subscriber who exercises the buy-through option provided by the 1992 Cable Act and takes a trapped premium service also has no problem at all. If a single scrambled pay channel or an occasional pay-per-view purchase is made, only one descrambler is required. If that descrambler is equipped with an ANSI/EIA 563 interface device, scrambling is

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[25]1993 Cable TV Facts, Cable TV Advertising Bureau, p. 22.

[26]Based on 1990 data provided by NCTA Research and Policy Analysis Department.

transparent. If it is a set-top descrambling converter, it can be connected in ways that allow full use of all functionalities of the subscriber's consumer electronics.

Although similar accommodations are slightly more expensive to accomplish where simultaneous viewing and recording of two scrambled channels are desired because of the need to employ two descramblers, there is rarely a need to make such accommodations. Subscribers who take multiple scrambled pay services are a tiny minority. Since nearly all pay services repeat their programming through the month, multiple opportunities to tape are available. Many premium channels repeat the most popular programs into the next month. There is almost no situation where a subscriber must tape one scrambled premium channel while watching another premium scrambled channel or risk losing access to programming that is not repeated within the month.

A popular extension of the premium category is "multiplexing". In this format, time shifted versions of the programming is provided on multiple channels, usually at no extra charge, to ensure that programs of interest are available at nearly all times. HBO is a pioneer in this format. HBO "counter programs" the various versions of its multiplex service so that different genre are available simultaneously. While the motivation for multiplexing is to increase the appeal of the programming, an important consequence is that the same programming is available on multiple channels at even more times.

The need to simultaneously record one scrambled channel while watching another scrambled channel is further diminished.

In situations where the expanded basic tier or higher tiers are scrambled, the subscriber may occasionally find the need to watch one scrambled channel while recording another scrambled channel. In those very limited situations, the subscriber should decide whether his needs justify the economic cost of renting an additional descrambler. In the case of an ANSI/EIA-563 device, not only is use of the device transparent, but the cost of the descrambler is significantly less than that of a set-top unit.

Based on the foregoing, it is clear that the proper solution to the compatibility problem is not to ban scrambling or freeze the development of new services, but for the cable and consumer electronics industries to undertake a cooperative effort to educate consumers in making intelligent equipment purchases and in the proper setup and operation of that equipment to achieve maximum enjoyment as Congress intended.[27] Clearly, the most

E. THE COMMISSION MUST MANDATE THE IMPLEMENTATION OF A DECODER INTERFACE CONNECTOR AS PART OF ITS "CABLE READY" STANDARD

With respect to newly manufactured TVs and VCRs, the Commission should adopt a "cable ready" standard that will allow scrambling to be made transparent through the implementation of a decoder interface connector port that would fully restore the tuners of the TV and VCR and allow for the implementation of set back descramblers.[28] CEG/EIA argues that the Commission should not implement a requirement to provide a decoder interface connector for four reasons.[29] None of the arguments raised by CEG/EIA provide persuasive reasons why a decoder interface connector requirement should not be implemented to improve compatibility. First, although it is true that previous attempts

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[28]Support for the decoder interface connector was virtually unanimous among the cable industry participants who filed comments in this proceeding. See Comments of National Cable Television Association ("NCTA") at p. 31; Comments of the Community Antenna Television Association ("CATA") at pp. 13-14; Comments of Tele-Communications, Inc. ("TCI") at p. 5; Comments of Continental Cablevision ("Continental") at p. 28; Comments of Telecable at pp. 3, 9; Comments of Cablevision Industries at pp. 8-9; Comments of Intermedia Partners at pp. 6, 28; Comments of Greater Media at p. 7; Comments of Booth American at p. 1; Comments of Time Warner at pp. 56-68; Comments of Scientific Atlanta at p. 3. The concept of a decoder interface (although not necessarily EIA/ANSI 563) also found support from some members of the electronics industry. See Comments of Sony Corporation of America ("Sony") at p. 14; and Comments of Zenith at p. 6. Indeed, the need for a standard decoder interface was also recently endorsed in the context of the Commission's recent inquiry into encryption technology for satellite cable programming. See Report in PP Docket No. 92-234 (adopted April 1, 1993) (reported in FCC New Release, Report No. DC-2378, released April 1, 1993 at p. 2).

[29]Comments of CEG/EIA at pp. 33-34. See also Comments of Mitsubishi at p. 8.

to implement the EIA/ANSI 563 decoder interface connector have not resulted in widespread deployment, these attempts were made on a purely voluntary basis and at a time when the consumer equipment compatibility problem was not as well appreciated as it is today. Should the Commission mandate implementation of the decoder interface connector and require cable operators to make available component descramblers to all subscribers whose TV sets

benefit from the value added. These arguments are entirely without substance. Time Warner has not advocated that the Commission require a decoder interface connector be provided on all televisions and VCRs, but only those which are designated as cable ready. Even one of the consumer electronics equipment manufacturers, Zenith, has proposed that consumer electronics manufacturers be required to design a decoder interface connector port into at least one remote control model of each color TV screen size that they market for screen sizes 25 inches and over.[33] While this is a possible first step, Time Warner believes that this proposal does not go far enough.

Implementation of the decoder interface connector must be accompanied by a requirement that only those TVs and VCRs which meet the Commission's "cable ready" standard be allowed to tune to cable channels. If the consumer electronics industry makes TVs and VCRs which do not comply with a technical standard for "cable ready" (such as requirements that the tuner be adequately shielded, be free from overload and other distortions when fed with full spectrum signals, and include the EIA/ANSI 563 decoder interface connector) but which can tune cable channels, it will be difficult or impossible to sell true "cable ready" TVs and VCRs. Most retail outlets feed all TVs on display with the same signal, frequently from a single-channel-output video disc player, and they all have excellent pictures. When the

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[33] Id., at pp. 6-7.

prospective customer asks about cable, the question is almost always, "will it tune the cable channels?" If the question is more sophisticated like "will it work on cable?" the answer of "it tunes the cable channels" will probably end the matter. The more expensive truly cable ready receiver won't stand a chance.

If just one manufacturer makes products that don't comply with the technical definition of "cable ready" yet tune the cable channels, most, if not all, manufacturers will soon have to respond to the competitive situation and also sell inferior products that will only exacerbate consumer confusion and dissatisfaction. The problems which gave rise to Section 17 of the 1992 Cable Act, 47 U.S.C. § 544A, will continue. The only hope for recovery of additional costs required for true "cable ready" capability is to require by regulation that any products which tune the cable channels comply with all "cable ready" standards. This issue is too complex and the sales room floor too competitive for any other approach to produce the results intended by the legislation.

Time Warner also believes that requiring "cable ready" televisions to be equipped with an interface port is not enough. To maximize consumer equipment compatibility, equipment manufacturers must also be required to provide a decoder interface connector port on all cable ready VCRs offered for sale. As noted in Time Warner's initial comments, deployment of the decoder interface connector port on VCRs is even more

important than requiring such an interface be provided on television sets for the following reasons.

First, equipping VCRs with a decoder interface connector will readily resolve almost all of the equipment compatibility concerns raised by Congress, even in the absence of a decoder interface connector port on the TV to which the VCR is connected. The decoder interface connector will not be as effective in cases where the television is equipped with the interface but not the VCR to which it is connected. Second, because VCRs contain mechanical parts that wear out with use, the replacement life of a VCR is approximately one-third of the life of a television. Accordingly, equipping VCRs with a decoder interface connector will result in a more rapid deployment of such devices in the marketplace.[34]

The bottom line is that by requiring decoder interface connectors be made available on only selected models of television sets and VCRs, households which do not subscribe to cable and/or which do not experience compatibility problems with their particular cable system will not be forced to purchase unwanted equipment in the form of a decoder interface connector

manufacturer. What the requirement will accomplish is to ensure that those customers who spend the money for a "cable ready" product get their money's worth. Likewise, the argument that consumers would not benefit from the value added is totally belied by the fact that it was the "cable ready" claims made by equipment manufacturers in the past that allowed them to overcome initial consumer resistance to the purchase of televisions equipped with more expensive electronic tuners.[35]

from implementation of a decoder interface connector requirement is no reason to deny the benefits of that interface to a large and constantly growing number of households which could benefit immediately.

F. THE COMMISSION SHOULD NOT REQUIRE DESCRAMBLING EQUIPMENT TO BE MADE AVAILABLE ON A COMMERCIAL BASIS

The consumer electronics industry advocates that

threaten signal security for several reasons. First, cable operators rely on strict control and accountability of legal descramblers in order to establish a case of signal piracy. The commercial availability of decoders will make it far more difficult to track signal piracy and establish a case of tampering. Second, cable subscribers are far more likely to feel that they can justifiably tamper with equipment which they own

the fact that the Commission recently adopted a Report and Order[41] that will require cable equipment to be unbundled from cable service and to be offered on the basis of actual cost to consumers, there is very little, if any, benefit to be gained by requiring the commercial availability of descrambling equipment that could offset the very real and substantial threat to signal security that such a commercial availability would pose.[42]

For similar reasons, the Commission should refrain from adopting a national scrambling standard. It is difficult to understand why the consumer electronics industry is so eager to add to the cost of their products by building in decoder circuitry which would render their products obsolete in the event of a security breach when they are unwilling to shoulder the lesser cost of providing a decoder interface device that would allow for signal security in a compromised system to be recovered without rendering a portion of the subscriber's television or VCR investment worthless. Indeed, the most severe problem with a national scrambling standard is the lack of alternatives if it is

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[41]Report and Order in MM Docket No. 92-266 (adopted April 1, 1993).

[42]The claims of some consumer equipment manufacturers that cable systems have a monopoly on customer premises equipment is nothing more than posturing. Wireless remotes, converters, bypass switches and other similar equipment is commercially available in any local Radio Shack or electronics products catalog at very reasonable prices. See Time Warner Comments at Appendix 2. These commenters also apparently forget that cable descramblers as well as other cable equipment are manufactured and supplied by several consumer electronics manufacturers including Zenith, Panasonic, Philips Broadband and Pioneer.

defeated. Experience has shown that there is no security method that has been devised which cannot be defeated. In 1991, over 75% of the more than 250,000 devices seized by law enforcement agencies were capable of circumventing addressable technology and allowing illegal reception of pay-per-view services.[43] If a national scrambling standard was imposed and later compromised, there would be no way to reimplement security without rendering the subscriber's equipment unusable. This would result in subscriber anger over having to accept an external descrambler after they had spent the money for equipment which was purchased in part to avoid the need for an external descrambler.

Significantly, the proponents of a national scrambling standard do not offer to provide any guarantees by the manufacturers or indemnification for cable operators, cable subscribers, and copyright holders. No third party escrow has been proposed to hold funds to cover the cost of replacement if that becomes necessary. The cable industry and its current suppliers understand the risks and consequences of security system compromise. The proponents of a national scrambling standard do not.

The naive proposition that digital technology will offer the unbreachable security system must also be viewed with skepticism. This view ignores the massive problems with digital "hackers" who

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[43]"1992 Theft of Service Survey Results," National Cable Television Association, Office of Cable Signal Theft (December, 1992).

crack security systems on computers -- some involved with national defense. While digital technology offers more options to signal protection designers, it also allows inexpensive computers to be easily linked together by hackers who would attack such systems. Digital security techniques require just as much of an alternative strategy to deal with defeat as analog systems. The Video Cipher experience in the home satellite delivery service is an important lesson that should not be forgotten. The fact is, diversity in signal protection is in itself a signal protection technique since it makes it impossible for a single defeat to have universal appeal. Multiple targets greatly complicate the work of the signal pirate.

Any proposal for a national scrambling system or which would allow decoder circuitry to be built into televisions and VCRs must be viewed for what it really is, a proposal advanced to elevate the economic concerns of equipment manufacturers, not the compatibility desires of the public.

G. THE COMMISSION MUST CONSIDER THE PROPERTY RIGHTS OF CABLE PROGRAMMERS

The proposals advanced by the consumer electronics industry fail to take into account the legitimate need to protect the intellectual property rights of cable programmers and other artists in their creative works. Interdiction technology has not been proven reliable and, even when operating properly, it fails to secure signals on the bulk of cable plant, thereby creating a temptation for signal pirates. This technology is endorsed by

consumer electronics equipment manufacturers merely because it does not require them to bear any of the burden of achieving compatibility. Similarly, in pressing for national standards for digital compression and scrambling to further their own self interest in selling hardware with more "features," the consumer electronics industry makes no provision for reimbursing or indemnifying copyright holders, cable systems or consumers for the significant economic losses which will occur if the national standard is defeated. To adopt the proposals advanced by the consumer electronics industry would exacerbate the already significantly costly problems surrounding the security of cable signals and the protection of copyrighted material.

The 1992 Cable Act, in directing the Commission to issue a report on equipment compatibility, states that this must be done "consistent with the need to prevent theft of cable service."[44] The Commission is therefore required to balance the costs and benefits to consumers of imposing compatibility requirements on cable operators and equipment manufacturers against the need for

signal security promotes constitutionally protected copyright interests. The Constitution recognizes the importance of protecting the rights of artists through its copyright provisions.[46] The flow of diverse ideas of programming depends on the ability of artists to control the dissemination of their work. As cable television becomes an increasingly important outlet for the publication and distribution of the work product of artists, care must be taken to ensure that the copyrights of artists are protected to the maximum extent possible. Signal security throughout the cable distribution path is essential to the realization of this end. The artist's rights must be protected all the way through to the ultimate consumer.

In sum, the interests of copyright holders must not be sacrificed on the altar of equipment compatibility. Signal security and the accompanying protection it gives to the work of artists must be taken into consideration when decisions are made relating to equipment compatibility.

H. CONCLUSION

In seeking to implement Section 17 of the 1992 Cable Act, the Commission must look beyond the self-serving interests of any single industry and create a framework for achieving compatibility that requires both the consumer electronics industry and the cable industry to carry their fair share of the burden of compliance. Beyond the obvious hardware and

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[46] See U.S. Const. Art. 1, § 8, clause 8.

technological challenges that the accommodation of compatibility and signal security concerns will entail, the Commission should not fail to give due attention to the importance of protecting

APPENDIX A

"Cable Ready" Technical Standard

Appendix A: "Cable Ready" Technical Standard

The terms "cable ready" and "cable compatible" are frequently applied to TV receivers and VCR's. Major cable subscriber frustrations are due to this terminology being used too loosely by the Consumer Electronics industry. Purchasers of these products are often led to believe that these products can be directly connected to the cable system without loss of functionality of either the cable service or the features included in the TV or VCR. This is generally not the case. There frequently are technical deficiencies in these products which impair performance when they are directly connected to the cable. Consumer Electronics manufacturers should not unilaterally declare their products to be "cable ready" without the consent and concurrence of the cable system for which they are supposedly "ready"! This is only logical and fair. The Consumer Electronics industry shouldn't be allowed to call products "cable ready" which don't work properly when directly connected to cable!

The concept of "cable ready" is really very straight forward. If a product is truly "cable ready" it can be connected directly to the cable system and

a) Not interfere with the reception of others.
b) Provide all the services the subscriber has paid for without the need of additional hardware installed between the cable system and the product.
c) Comply with all the FCC rules concerning cable radiation and cable technical standards.
d) Implement features in a way that remain substantially usable when the product is connected to cable.

The goal is simple: avoid the need for a set-top cable box. If a set-top box is needed to enjoy a paid-for cable service, the TV or VCR is not "cable ready". An implicit goal is to minimize consumer confusion, frustration, and waste.

For a Consumer Electronics product to be truly "cable ready", there are a number of basic technical requirements:

1) Tuner Range: The TV or VCR must conveniently tune all channels offered on the cable system. Otherwise a set-top converter is required for access to channels the subscriber has paid for.
2) Tuner Quality: The tuner must be of sufficient quality to function with all the channels simultaneously available at its input terminals without introducing distortions or noticeable noise. The tuners used in cable converters are generally of higher quality than those used in TV receivers or VCR's in order to accommodate these needs.

    a) If the tuner is not of adequate quality, it will combine signals from several channels in a manner that produces disturbing moving background bars and patterns in the picture. This problem is called "overload".
    b) Cable converters use a more expensive "double conversion" tuner which eliminates "image response". Without this added expense, an unwanted channel's signal may be mixed with the desired channel, distorting the picture.
    c) The tuning system must have adequate adjacent channel rejection to avoid energy from adjacent channels contaminating the picture or sound of the desired channel.
    d) Cable converter tuners typically have a lower "noise figure" which introduces less "snow" into the picture than a TV or VCR tuner.
    e) The tuner must not feed back extraneous interfering signals into the cable system to cause reception problems on other receivers.

3) Direct Pick Up Interference: The internal circuits of the TV or VCR must be adequately shielded so as not to pick up signals off-air directly. When this shielding is inadequate,

signals directly picked up off-air are mixed inside the TV (or VCR) with signals from the cable producing an unpleasant (and sometimes unwatchable) mess. In many of these cases, the only solution is to add a set-top converter with its superior (and more expensive) shielding. The problem will become more acute as cable bandwidth expands to higher frequencies. It is more difficult to shield against UHF broadcast channels. In addition, other signals, such as from pagers or two way radios cause serious problems. This shielding requirement must apply to all cables, switches, splitters, and other devices supplied with TV's and VCR's as well as any other devices meant to be connected to cable.

4) ANSI / EIA 563: If the cable system uses scrambled signals, the TV or VCR must accommodate a descrambler which can be plugged into the rear of the TV or VCR to allow descrambling after the TV or VCR's tuner and remote controls. This approach has been defined by the Electronic Industries Association's (EIA) and the National Cable Television Association's (NCTA) Joint Engineering Committee and has been endorsed by the American National Standards Institute, ANSI, as the ANSI / EIA 563 Decoder Interface Connector. Without the Decoder Interface Connector plug, a set-top descrambler is required to give access to scrambled signals desired by the subscriber.

5) Two Way IR Pass Through / Forced-Tuning: If the cable system uses two way cable technology for conveniently ordering Impulse Pay Per View, IPPV, services, the Decoder Interface Connector implementation must include the pass through of remote control signals to the descrambler module. In the case of Near Video On Demand, i.e. multiple start times for movies, the descrambler module must be able to send remote control signals to the TV or VCR's tuner to force-tune it to the correct channel at the appropriate time. Otherwise a set-top box is required to enjoy IPPV services.

6) Back Feed: There are many sources of interfering signals within a TV or VCR. These include the tuner's Local Oscillator and the color oscillator. Modern TV's and VCR's with digital signals generate substantial quantities of interfering signals. The expanded use of On Screen Displays increases this problem. These signals must not "back feed" into the cable system to interfere with other TV's and VCR's.

7) Signal Splitters: If the TV or VCR employs signal splitters, they must be of sufficient bandwidth to split the entire spectrum. These splitters should split the signal evenly. In the ideal case, a wide-band, low noise amplifier is provided so that signal strength is maintained at all outputs of the splitter.

8) Switch Isolation: When source selection switches are used, they must have adequate isolation over the entire frequency band so cable signals cannot leak to other devices such as roof top antennas.

9) Replaceable Tuner: The TV or VCR tuner should be replaceable so that the subscriber may continue to use his product if technology makes it possible to carry more channels on cable than his existing tuner can access. A replacement of the tuner module will prevent the need to purchase a whole new unit. One possible method of accomplishing this is with a tuner module compatible with the EIA 563 Decoder Interface Connector and including such a connector itself. This tuner module could then be placed conveniently out of sight. The remote control signals would pass through the TV or VCR to it and control it just as they had controlled the old tuner. A descrambler plugged into the tuner module's EIA 563 connector provides descrambling as needed.

10) Antenna Access: A separate antenna connector is required. If the TV or VCR is remote controlled, a button is provided for cable / antenna access. In the "antenna" mode, the tuner tunes broadcast channels. In the "cable" mode, the tuner tunes HRC, IRC, or standard cable channels. This may be determined by another control or may be automatic. This antenna connector allows subscriber access to broadcasters who decline to give Retransmission Consent or who require fees that make them a separate pay service. Subscribers can then elect to use the switch or pay for the channel.

It will be appreciated that this is a situational definition. For example, in the new 150 channel system in Queens New York, no existing TV or VCR can satisfy the definition of "cable ready" since none can tune the 1 GHz spectrum containing 150 cable channels. For subscribers to be

able to enjoy all the signals they have paid for, a set-top converter must be supplied by the cable operator. As another example, the same TV receiver which gave acceptable performance in a suburb far away from any broadcast television transmission towers may require a set-top converter to reject these signals if the subscriber moves near a broadcast tower. If the TV receiver's internal shielding is inadequate, direct pick up interference may be experienced which spoils the picture reception. The only solution available to the cable operator is to install a set-top converter with superior internal shielding.

Another source of confusion generated on the TV sales floor is the specification of the number of "cable ready" channels. The number is given as the sum of the broadcast VHF (12) plus UHF (69) plus cable channels which can be tuned. A purchaser who is told that the TV will tune 117 channels can be forgiven for being impressed and thinking that it is adequate. Yet this only accommodates the 36 channels of a 300 MHz cable system. More and more, this is inadequate. Under this counting scheme, a "cable ready" TV for use in the Queens New York 150 channel system needs 12+69+150 = 231 channels! A standard method of specifying channel capacity of products and cable systems is required. TV's and VCR's should be specified as "cable ready for XXX channel cable systems."

It is not well recognized that the invention of the cable converter was not to tune more channels. The first converters did not tune more than twelve channels. The cable converter was invented to overcome deficiencies in TV receiver tuners. They were meant first to combat the direct pick up problem described above. Then, as more channels were added to cable service, the cable converter took on added technical burdens. The cable converter was required to counter the effects of non-linear performance and "image response" of less expensive tuners. Improved noise performance is also important. Lastly, the tuner must not back feed interfering signals into the cable system.

Potential for Evasion: All TV's and VCR's which tune cable channels must comply with all of the technical specifications for cable ready. If a TV or VCR does not comply with the technical definition of cable ready, it must only tune the broadcast channels. Otherwise consumer confusion and frustration is inevitable. To allow products to be sold which tune cable channels but do not comply with the technical definition of "Cable Ready" is to provide an opportunity for Evasion of the intent of Congress when it wrote section 624 A (c) (2) (A): "Regulations Required ... to specify the technical requirements with which a television receiver or video cassette recorder must comply in order to be sold as 'cable compatible' or 'cable ready'..." Merely not using those terms should not be an escape mechanism for producing products which do not perform properly when connected to cable. In fact, the terms "Cable Ready" and "Cable Compatible" have not appeared on the products and literature of most major brands for several years. None the less, consumers continue to purchase these products and become confused and frustrated with their performance when connected to cable. This is because consumers consider it only logical that if a product tunes the cable channels, it should work on the cable channels. It is difficult to argue with that premise. It would be absurd to think that the Cable Television industry could avoid the requirements of the Cable Act just by not using the word "Cable" for its products. Just calling itself "Wired Television" would not stand as a reason for avoiding the provisions of the Cable Act. Likewise, avoiding the use of the terms "Cable Ready" and "Cable Compatible" cannot be a reason to sell products which evade the intent of the legislation.

Enforcement means and penalties are required along with procedures for challenging the compliance of products which tune cable channels.

Without more discipline, there is the potential for continued consumer anger, confusion, and losses as money is spent on product features erroneously thought to be usable when directly connected to cable. The purposes of these provisions of the Cable Act will not be realized if this discipline is not imposed.

Purchased Converters: Section 624 A (c) (2) (C) requires cable operators "... to promote the commercial availability ... of converter boxes ..." All of the specifications for "cable ready" must also apply to set-top converters sold to the public to prevent the same difficulties from occurring when subscribers purchase their own converters. Otherwise, cheap television tuners will be sold in plastic boxes with inadequate shielding and other deficient performance factors. Subscribers will take these home and be frustrated. The converters which are sold to subscribers must include the ANSI / EIA 563 Decoder Interface Connector so that the subscriber is protected against having his investment obsoleted if he moves to a cable system with scrambling or if his cable system offers new services which involve scrambling. The same connector requirement is not needed for converters owned by the cable operator, since the subscriber is not at risk if that equipment is made obsolete by a cable system upgrade.

If set-top converters are sold which include the ANSI / EIA 563 plug and fully comply with the "Cable Ready" technical specifications, these units may include a wide variety of interesting features. Picture In Picture, Electronic Program Guides, Special Timers, Program Identification, etc. could be made available to owners of older Televisions and VCR's. If such consumers move to another cable system, the utility of their purchase is preserved because the new cable system's descrambler can be plugged into the back of their unit.

APPENDIX B

Responses To Submissions To FCC Compatibility NOI

Appendix B: Responses to Submissions to FCC Compatibility NOI

The FCC has received extensive response to its Notice of Inquiry, NOI, on Cable and Consumer Electronics compatibility. It is evident that there is substantial difference of opinion, different priorities, much confusion, and a lot of erroneous information. The following attempts to

Telcos:
25) Ameritech Operating Companies
26) BellSouth Telecommunications Inc.
Cities:
27) New York City Dept. of Telecomm. and Energy
28) Village of Schaumburg Illinois
29) City of Mesa, Arizona
Others:
30) Multichannel Communications Sciences, Inc.
31) Oregon Consumer League
32) Natural Resources Defense Council